

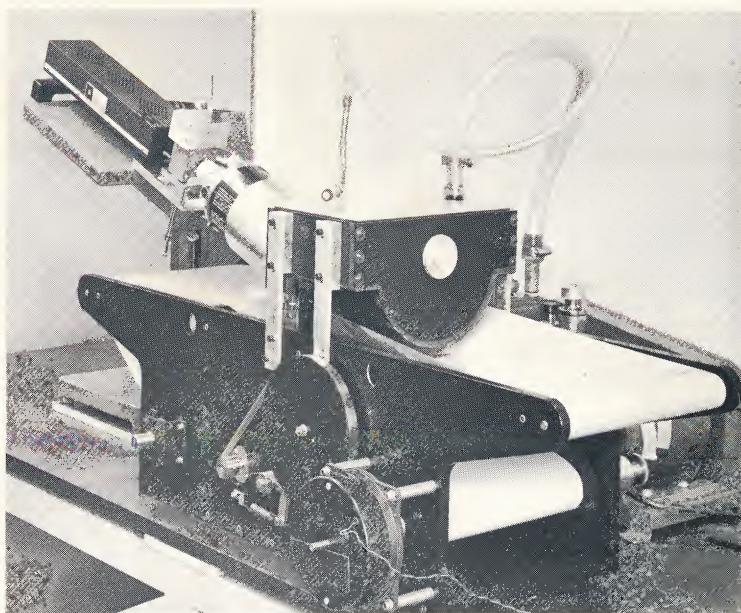
WIDEBAND LASER RECORDER- REPRODUCER

APPLICATIONS:

- Airborne photo-reconnaissance
- High-rate PCM telemetry recording
- Elint recording
- Radar/infra-red data readout
- Color from image orthicon
- High-speed facsimile systems

TRW SYSTEMS

ONE SPACE PARK, REDONDO BEACH, CALIFORNIA



FEATURES:

- Recording bandwidth greater than 200 mHz
- 50 pounds high resolution film (typical)
- 8 hours continuous recording
- Data tracks as narrow as 2.5 microns
- Hysteresis-synchronous motor driven multi-sided mirror scanner

OPERATING CHARACTERISTICS

TRW Systems has developed a wideband recorder and playback system which uses laser, optical, electro-optical and electronic techniques to achieve 200-mHz bandwidth recording on photographic film. The system is designed primarily for use in photo-reconnaissance, high-rate PCM telemetry, and Elint recording.

To develop the new recorder, TRW has advanced the state-of-the-art in coherent light sources, amplitude modulation of light, high-speed scanners, film transport mechanisms and wideband amplifiers. The advanced techniques permit higher packing densities, increased dynamic range capabilities and less complexity.

The optical system of the TRW laser recorder is defraction limited and records up to nine 1/2-inch long data tracks as narrow as 2.5 microns at 400 megaspots per second. Film is transported at rates up to 15 inches per second continuously for periods of over one-half hour. The new scanner and amplifier make it possible for the unit to continuously record at wide bandwidths without loss of data. The amplifier has a passband of 2 kHz to 300 mHz/sec with a 0.2 nanosecond differential time delay up to 200 mHz. The advanced system includes a collector and read-out system that plays back 200 mHz data in real time with minimum flutter and jitter in the recovered signal. With additions to the existing system, operation at 1000mHz is feasible.

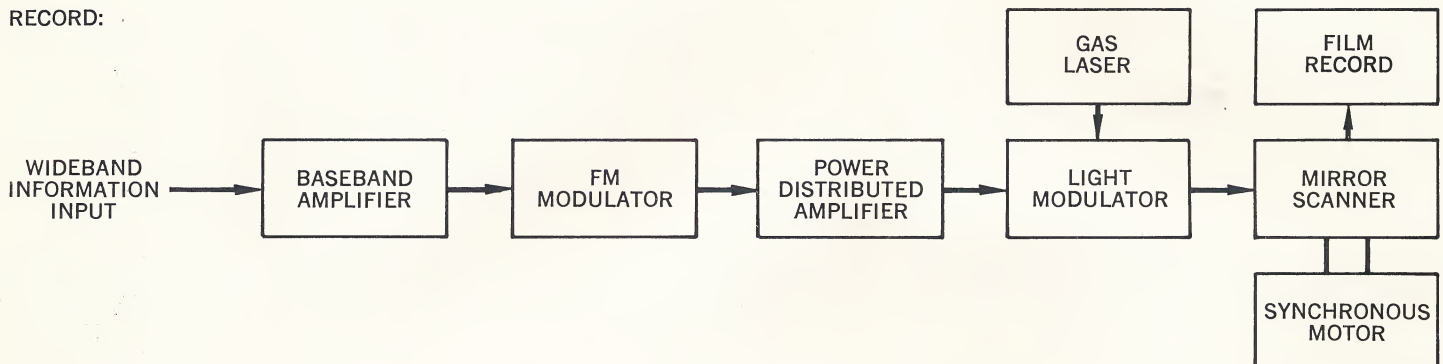
PHYSICAL CHARACTERISTICS

High-Speed Scanner	3000 rps Hysteresis-Synchronous Motor-Driven Multi-Sided Mirror Scanner	Coherent Light Sources	Helium-Neon or Argon Laser
Optical System	Conventional Diffraction Limited Optics	High-Frequency Modulator	KDP Crystal Modulators
Playback	Servo-Controlled Film Transport Playback	High-Resolution Optics	f/2.5 Diffraction — Limited Lens

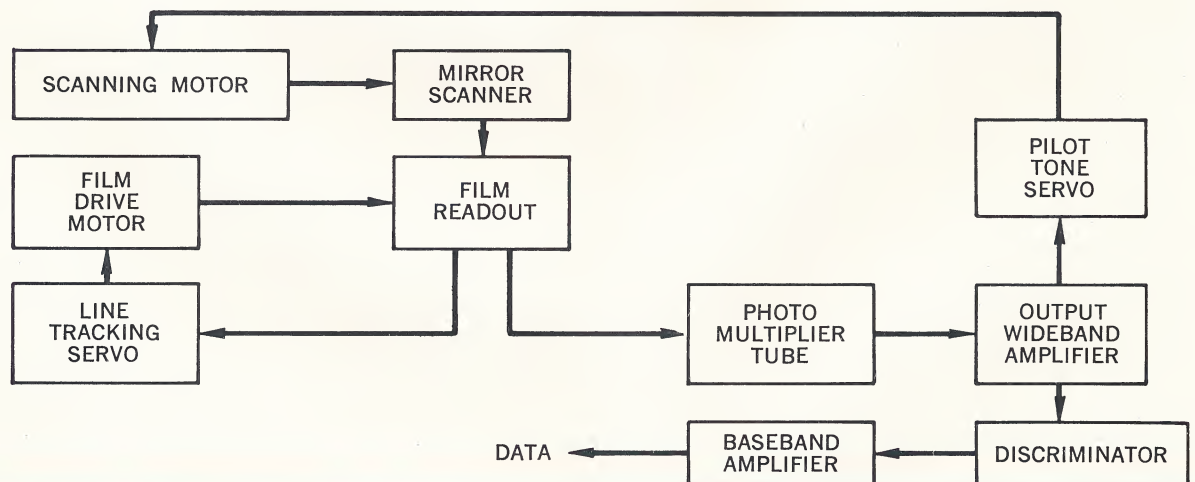
SPECIFICATIONS

Bandwidth	Greater than 200 MHz	Data Track Width	2.5 microns with packing densities up to 5×10^7 bits per inch squared
Film Capacity	50 Pounds of High-Resolution Film	Unit Weight	100 Pounds
Recording Capability	8 Hours Continuous Recording	Size	4 Cubic Feet
Film Transport Rate	15 inches/sec	Power Input	200 Watts

RECORD:



PLAYBACK:



FOR FURTHER INFORMATION CONTACT:

OFFICES

TRW SYSTEMS

ONE SPACE PARK, REDONDO BEACH, CALIFORNIA

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"SOLOPHONE" (Fitcher Electronics/Kyerson Press)

Apparently 105 2 multi-readout
type playback unit.

2. The Tape Library

Master Tapes ✧ The most practical size reel for use as a master taps is the 5-inch reel of tape. This is sufficient for 30 minutes at 3¾ inches per-second.

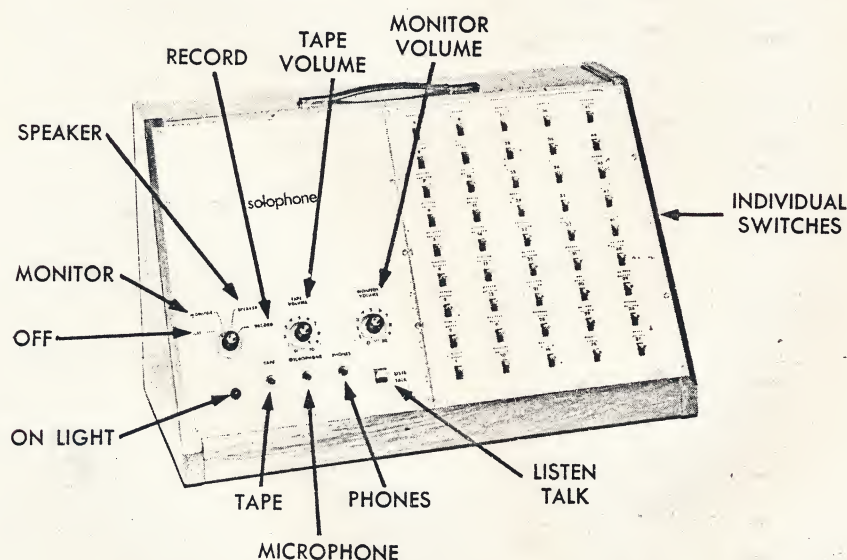
It is much better to have each drill on a separate tape rather than several on one large tape with four tracks. In the case of the latter, it is too difficult to locate quickly a specific drill. The cost of the extra tape is insignificant when measured against convenience. If commercial tapes of longer length are already part of the classroom inventory, it is worth the time to duplicate them on small reels.

Labelling and Storage ✧ Each master tape should be labelled according to language, course, and drill. For example:

French, 9. avoir — Item Substitution

Labels should be self-adhesive, measuring ¾ x 1¼ inches. These are available in sheets from most stationery stores.

Master tapes should be stored in a cupboard at the front of the classroom (if possible near the console) and arranged according to the language and course for accessibility.



3. Monitoring

Drill sessions with the Solophone are a room programme. As in any class, the contact between the student and the tape benefits will accrue from the short periodic system of monitoring student performance.

Preparing a Seating Plan ✧ Prepare a seating plan for each class using sufficient space under each name for individual student performance. During the drill place the seating plan beside you for mistakes. The seating plan is also used when testing performance in the laboratory.

CLASS 9.5.3			
8	8	8	8
7	7	7	7
6	6	6	6
5	5	5	5
4	4	4	4
3	3	3 Bill Taylor	3
2	2 Mary Lee	2	2
1 Tom Jones	1	1	1

Recording Comments on Seating Plan ✧ The class is doing a structure drill on the verb tense. Here you may encounter mistakes in pronunciation, and liaison.